

WHAT IS CLAIMED IS:

1. A method of forming an optical lens, the method comprising the steps of:
 - a) mixing together an optically clear dead polymer, a reactive plasticizer in an amount to render the composition semi-solid and malleable, and an initiator to form a semi-solid polymerizable composition, wherein the dead polymer and the reactive plasticizer exhibit compatibility at temperatures not higher than 100°C, and wherein the polymerizable composition remains optically clear and exhibits low shrinkage when polymerized;
 - b) shaping the semi-solid composition into a desired geometry; and
 - c) exposing the semi-solid composition to a source of polymerizing energy; to give the resultant optically clear lens comprising a crosslinked polymer network of reactive plasticizer within an entangled dead polymer.
- 15 2. A method according to claim 1 wherein the optically clear lens comprises a semi-interpenetrating crosslinked polymer network of reactive plasticizer within an entangled dead polymer.
- 20 3. A method according to claim 2 wherein the polymer network of reactive plasticizer is further crosslinked to the dead polymer.
4. A method according to claim 1 wherein the optically clear lens comprises interpenetrating reactive plasticizer polymeric chains within an entangled dead polymer.
- 25 5. A method according to claim 1 wherein the optically clear lens is impact-resistant.
6. A method according to claim 1 wherein the optically clear lens exhibits high fidelity replication.
- 30 7. A method according to claim 1 wherein the optically clear lens exhibits dimensional stability.
8. A method according to claim 1 wherein the optically clear lens is an ophthalmic lens.
- 35 9. A method according to claim 1 wherein the semi-solid composition is shaped by placing the semi-solid composition in contact with a mold, the mold corresponding to the desired geometry.

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10. A method according to claim 9 wherein the semi-solid is shaped by placing it into about the center of the mold, such that shaping the semi-solid while optionally heating causes the semi-solid composition to flow radially outward.
11. A method according to claim 1 which further comprises the step of providing a waiting period at a predetermined temperature after the composition is shaped and before exposing to the source of polymerizing energy.
- 10 12. A method of forming a shaped article, the method comprising the steps of:
mixing together a dead polymer, a reactive plasticizer in an amount to render the composition semi-solid and malleable, and an initiator to form a semi-solid polymerizable composition, which exhibits low shrinkage upon polymerization;
shaping the semi-solid composition into a desired geometry; and
exposing the semi-solid composition to a source of polymerizing energy, to give the resultant article.
- 15 13. A method according to claim 12 wherein the semi-solid composition is shaped by placing the semi-solid composition in contact with a mold, the mold corresponding to the desired geometry.
- 20 14. A method according to claim 12 which further comprises the step of providing a waiting period at a predetermined temperature after the composition is shaped and before exposing to the source of polymerizing energy.
- 25 15. A method according to claim 14 wherein the semi-solid is shaped by placing it into about the center of the mold, such that shaping the semi-solid while optionally heating causes the semi-solid composition to flow radially outward.
- 30 16. A method of forming a shaped article, the method comprising the steps of:
mixing together a dead polymer, a reactive plasticizer in an amount to render the composition semi-solid and malleable, and an initiator to form a semi-solid polymerizable composition, which exhibits low shrinkage upon polymerization;
forming the semi-solid composition into a pre-form;
providing a mold corresponding to a desired geometry;
35 placing the pre-form into the mold;

compressing the mold, with optional heating, so that the semi-solid composition takes on the shape of the internal cavity of the mold; and
exposing the semi-solid composition to a source of polymerizing energy, to give the resultant article.

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17. A method according to claim 16 which further comprises the step of providing a waiting period at a predetermined temperature after the pre-form is compressed in the mold and before exposing to the source of polymerizing energy.
- 10 18. A method according to claim 16 wherein the pre-form is placed in contact with the mold at about the center of the mold, such that compressing the mold while optionally heating causes the semi-solid composition to flow radially outward.

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